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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,650	11/20/2001	Moo-Jong Lim	8733.536.00-US (PATENT)	8857
30827	7590	12/13/2005	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			TRAN, HENRY N	
			ART UNIT	PAPER NUMBER
			2674	
DATE MAILED: 12/13/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/988,650

Applicant(s)

LIM ET AL.

Examiner

Henry N. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-16 and 18-20 is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The Amendment received September 20, 2005 has been fully considered; and this Office action is in response thereto.

#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihara et al (U.S. Patent No. 6,115,016, hereinafter "Yoshihara") in view of Makino (U.S. Patent No. 6,570,554, hereinafter "Makino").

Yoshihara teaches a field sequential liquid crystal display device, comprising: a liquid crystal panel 21 having an upper substrate 2, a lower substrate 4, and an interposed liquid crystal layer 13, a data input driver 32, a back light 22 comprising of a LED array 7 having Red, Green, and Blue light sources, which are disposed serially and repeatedly at a lower corner of, and under the liquid crystal panel 21; a diffusing panel 6 (a light guiding plate and light diffusion plate 6); and a signal processing circuit (31 and 35) comprising a control signal generating circuit/image memory 31 and a back light control circuit/driving power source 35 connected to the light sources of the backlight 22 for receiving image data DD for determine the average lamination in the image data and color data PD (Yoshihara says "pixel data") for directly controlling a

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luminance of each of the light source sources based on the determined lamination data, wherein, the signal processing circuit is further for controlling the transmissivity of the liquid crystal by turning on thin-film transistor 41 (TFT 41) during a frame utilizing sub-frames driving scheme; wherein, light sources are turned on and off during each sub-frame period while TFTs are turned on; see figures 1, 2, 5 and 6; col. 2, lines 3-9, lines 45-54; col. 7, line 39-65; col. 8, line 6-16; and col. 10, lines 34-54.

However, Yoshihara does not teach that the signal processing circuit is connected to an output of the data input driver.

Makino discloses a field sequential liquid crystal display device utilizing color back-light light sources of the backlight 22; wherein a backlight control circuit 35 is connected to an output of the control signal generation circuit 31, which is connected to a data driver 32, a voltage generation circuit 34, and a scan driver 33 for controlling a luminance of each of the light sources provided in a LED array back-light 54, see Fig. 7; wherein an integrated driver 50 comprising the data driver 32 and a scan driver 33 is utilized, see Fig. 9, col. 10, line 25-36.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate drivers as taught by Makino for integrating the signal processing circuit 31, the data driver 32, the scan driver 33, and the voltage generating circuit 34 of the Yoshihara device for producing the claim invention because this would provide an improved and highly integrated signal processing circuit, which is compact and convenient to use, and reduces cost to manufacture. By this rationale, claims 1-12 are rejected.

*Allowable Subject Matter*

3. Claims 13-16 and 18-20 are allowed.

*Response to Arguments*

4. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

It's noted that the claim language does not define that the processing circuit (300) connected to an output of the data driver (310) and to the light sources (340, 360 and 380) for deciding: (i) the required transmissivity of the liquid crystal during each sub-frame, and (2) the required luminance of the light source used during that sub-frame so as to produce an image having an luminance corresponding to the image signal data, as illustrated in Fig. 8 and the paragraph [0052] of the specification. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

*Conclusion*

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

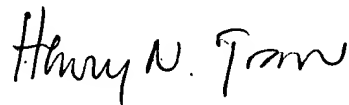
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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry N. Tran whose telephone number is 571-272-7760. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick N. Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Henry N Tran  
Primary Examiner  
Art Unit 2674

12/7/05  
HT